

REMARKS

Claims 1-2 and 4-8 were pending. Claims 1, 5 and 6 are amended. No new matter is added. Applicants respectfully request reconsideration of the rejections.

Claims 1-2 and 4-8 have been rejected under 35 U.S.C. 112, first paragraph, as enabled for a method of reducing cell death, but not preventing radiation-induced cell killing. Without conceding to the correctness of the rejection, Applicants have amended Claim 1 to recite a reduction in cell killing. In view of the above amendments and remarks, withdrawal of the rejection is requested.

Claims 1-2 have been rejected under 35 U.S.C. 102 as anticipated by Fox (1974). Without conceding to the correctness of the rejection, Claim 1 has been amended to recite the limitations of Claim 4, which claim is free of the cited art.

The presently claimed invention is distinguished from Fox *et al.*, in that Fox *et al.* utilize UV irradiation. This is entirely different from ionizing radiation (e.g. photons). UV kills cells by causing characteristic thymidine dimers. The mechanism of cell death induced by ionizing radiation is different and involves different signal transduction pathways. Recent publications demonstrate different mRNA expression profiles following irradiation of cells with UV vs. ionizing radiation, which further substantiates the different mechanisms of cell death induced by UV vs. ionizing radiation.

In view of the above amendments and remarks, Applicants respectfully submit that Claims 1-2 are not anticipated by the cited art. Withdrawal of the rejection is requested.

Claims 1, 2, and 4-8 have been rejected under 35 U.S.C. 103 as being unpatentable over Gilbert *et al.* (1996). Gilbert *et al.* disclose a method of protecting tumor cells from radiation damage. The Office Action states that one of ordinary skill in the art would have expected that treating normal cells with a hyperpolarizing agent would provide the same degree of protection as treating the tumor cells.

Applicants respectfully submit that one of skill in the art would not have predicted that normal cells would have the same response as tumor cells in response to radiation protection. Applicants have previously pointed out the many differences in cellular response to radiation between normal and transformed cells. In particular, it is noted that tumor cells can have altered baseline activity of the Na⁺/K⁺ATPase pump in tumor cells overexpressing Bcl-2 makes it difficult

to extrapolate to what one would expect in normal cells, with little Bcl-2 expression and normal pump activity.

The Office Action has responded by stating that these features are not specifically set forth in the claims. Applicants respectfully submit that the limitation of the claims to "normal, non-transformed cells" includes the inherent properties of such cells, which properties include all of the differences between normal cells and transformed cells. It is not necessary for Applicants to set forth each and every distinction between these cells, as the differences are generically included in the claims as written.

The Examiner has noted that both Williams *et al.* and Gilbert *et al.* find that cancer cells have hyperpolarized membranes relative to normal cells. Applicants respectfully submit that these differences between cancer cells and normal cells create uncertainty as to whether methods applicable to one cell can be extrapolated to the other. In the absence of the evidence provided by Applicants, one of skill in the art could not have predicted the effect of the present methods on normal cells.

In view of the above amendments and remarks, Applicants respectfully submit that the present claims are not made obvious by the cited art. Withdrawal of the rejection is requested.

CONCLUSION

Applicants submit that all of the claims are now in condition for allowance, which action is requested. If the Examiner finds that a Telephone Conference would expedite the prosecution of this application, she is invited to telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any other fees under 37 C.F.R. §§ 1.16 and 1.17 which may be required by this paper, or to credit any overpayment, to Deposit Account No. 50-0815, order number STAN-274.

Respectfully submitted,

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